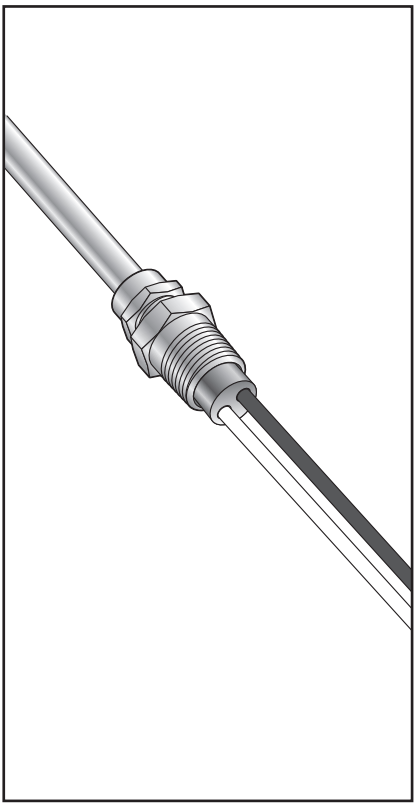
PENTAIR

Pyrotenax BRAND

Industrial MI Wiring Cable Termination

INSTALLATION MANUAL FOR SYSTEM 2000 AND SYSTEM 2200 WIRING SYSTEMS



Important Safeguards and Warnings

⚠ WARNING: FIRE AND SHOCK HAZARD.

Pyrotenax Industrial Wiring Cables must be installed correctly to ensure proper function and to minimize the risk of personal injury or fire. Read these important warnings and carefully follow the installation instructions.

- **When MI cable is stripped and terminated, cut metal edges can cause cuts and loose powder can cause eye irritation. To prevent injury, gloves and safety glasses must be worn when carrying out these operations.**
- **To prevent burns when drying or brazing the cable, allow it to cool until warm to the touch before completing the remaining termination instructions.**
- **Avoid skin or eye irritation from contact with the epoxy sealing compound. If accidental contact occurs, wash skin with soap and water, or flush eyes with water for 15 minutes. Consult MSDS* for further precautions and treatments.**
- **The insulation resistance (IR) test can cause sparks. To prevent fires in hazardous locations, be sure there are no flammable vapors in the area before performing this test.**

*** MSDS sheets for the epoxy sealing compoind, mastic sealing compound, silver solder and the silver brazing flux are available on our website: www.thermal.pentair.com**

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1 General Information

1.1 Use of the Manual

This installation manual covers the termination procedure for Pyrotenax Alloy 825 sheath mineral insulated (MI) wiring cables. The instructions show how to make MI cable terminations using strip-back tails, crimp-on tails or brazed-on tails with either the mastic sealing compound or epoxy sealing compound. Use the chart following to identify which termination kit has been supplied and read the appropriate instruction steps completely before performing the termination procedure.

Strip-back Tail Termination Procedure

- Mastic sealing compound - page 9, Steps 1 to 19
- Epoxy sealing compound - page 9, Steps 1 to 13, 14a to 19a

Crimp-on Tail Termination Procedure

- Mastic sealing compound - page 27, Steps 1 to 6
- Epoxy sealing compound - page 27, Steps 1 to 6

Brazed-on Tail Termination Procedure (uses epoxy sealing compound)

- Insulated stranded wire tails - page 33, Steps 1 to 19
- Bare stranded wire tails and insulating sleeving - page 33, Steps 1 to 7, 8a to 19a

For information on installing and supporting Pyrotenax Alloy 825 sheath MI wiring cables, refer to the Pyrotenax MI Cable Industrial Wiring Installation Manual (H57987). For fire-rated systems, the termination must be protected from the fire as described in the Pyrotenax MI Cable Industrial Wiring Installation Manual (H57987).

For technical support or for further information on terminating MI wiring cables, please contact your Pentair Thermal Management representative or Pentair Thermal Management directly.

1 General Information

For additional information, contact:

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1.2 Safety Guidelines

The instructions contained in this booklet are important. Follow them carefully to avoid injuries and to ensure that the MI cable is properly terminated.

When MI cable is stripped and terminated, cut metal edges can cause abrasions to the hands and loose powder may cause irritation if it enters the eyes. For these reasons gloves and safety glasses must be used when carrying out these operations.

- Important instructions are marked **Important**
- Safety warnings are marked **WARNING**
- Safety cautions are marked **CAUTION**

1 General Information

1.3 Moisture Absorption

Because the magnesium oxide insulation of MI cable is hygroscopic, it will absorb moisture when exposed to air for any length of time, resulting in decreased insulation resistance (IR). This can be corrected by one of the following methods:

1. When the cable sheath is stripped, the moisture affected magnesium oxide insulation will normally be removed during the termination procedure. To prevent further absorption of moisture, the termination should be completed immediately following the IR test.
2. If excess cable is available, 6 to 12 in (150 to 300 mm) of cable may be removed from the end before proceeding with the termination.
3. Follow the drying out procedure in Appendix D.

1.4 Grounding/Earthing

If one conductor is to be used as a grounding conductor, ensure that it is identified with an appropriately colored marker or tape. The sleeving supplied with the termination kit used to identify the grounding conductor may not be a standard color (such as green or green/yellow).

1.5 Field Testing

The IR of MI cables should be checked with a 500 Vdc megohmmeter. While an IR value of infinity is desirable, minimum acceptable IR values, and the test procedure, are shown in Appendix C. Where low IR readings are obtained the termination must be remade.

1 General Information

1.6 Approvals

Termination kits are supplied with either a mastic sealing compound or epoxy sealing compound and are approved for use in the locations shown following.

U.S. and Canadian Approvals

Kits using mastic sealing compound

Ordinary Locations
Hazardous Locations

Class I, Div. 1 and 2, Groups A, B, C, D
Class II, Div. 1 and 2, Groups E, F, G
Class III, Div. 1 and 2

Kits using epoxy sealing compound

Ordinary Locations
Hazardous Locations

Class I, Div. 1 and 2, Groups A, B, C, D
Class II, Div. 1 and 2, Groups E, F, G
Class III, Div. 1 and 2

ATEX Approved Components

MI Cable Seal Assembly

II 2G EEx e ll
Baseefa02ATEX0194U

Cable Glands

II 2GD EEx d llC
Baseefa03ATEX0347X
CE 1180

2 Installation

2.1 Strip-back Tail Termination Procedure

In this procedure, the cable end is sealed using the mastic sealing compound or epoxy sealing compound supplied with the termination kit. The tails are formed by removing an appropriate length of the cable sheath and covering the exposed solid conductors with insulating sleeving.

Figure 1 shows the components of each termination kit. Visually check the parts supplied with the termination kit to identify which sealing compound has been supplied and follow the appropriate steps to terminate the cable.

2 Installation

Figure 1a: Kit parts for mastic sealing compound

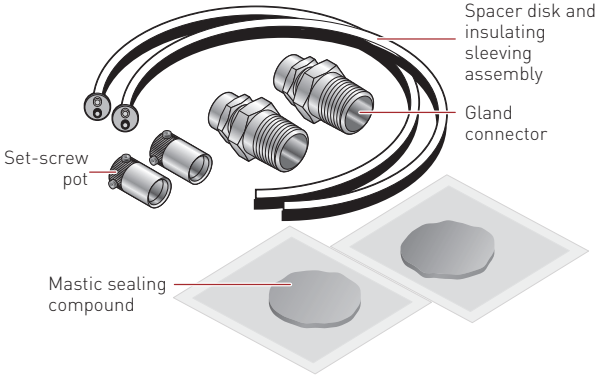

Figure 1b: Kit parts for epoxy sealing compound

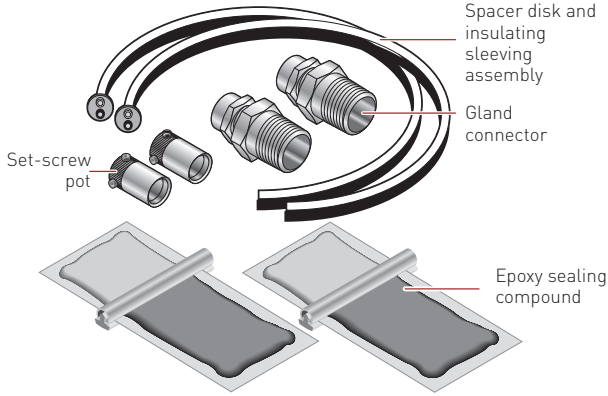

Figure 1: Components supplied in strip-back tail termination kits

2 Installation

The completed termination using the mastic sealing compound is shown in Figure 2. Store the package containing the mastic sealing compound at room temperature prior to use.

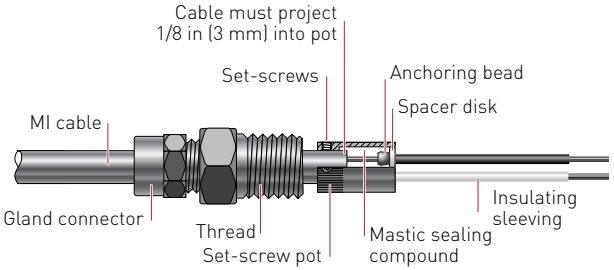

Figure 2: Completed mastic sealing compound termination (cut-away pot shown)

The completed termination using the epoxy sealing compound is shown in Figure 3. The epoxy sealing compound must be stored at temperatures between 65°F to 77°F (18°C to 25°C), and when used, must be maintained at a temperature of 65°F (18°C) minimum for 16 hours to fully cure. Note that the spacer disk is discarded once the epoxy has cured.

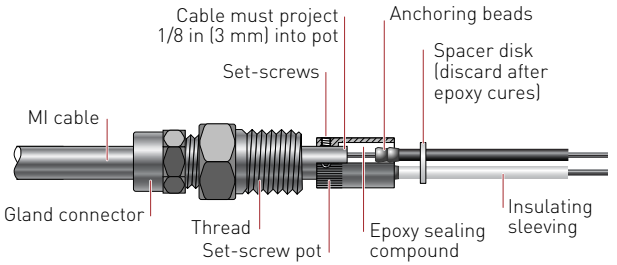

Figure 3: Completed epoxy sealing compound termination (cut-away pot shown)

2 Installation

Tools and Materials Required:

- Pyrotenax T-bar stripping tool
- Pyrotenax hand vise
- Pyrotenax crimping and compression tool (if terminating cable using mastic sealing compound)
- Diagonal (side) cutters
- Measuring tape or ruler
- Hacksaw
- Flat file
- Tubing cutter
- Adjustable pliers/vise grips
- Oxy-acetylene or mapp gas torch (to dry out cable)
- Permanent marker
- 500 Vdc megohmmeter
- Electrical tape (if terminating cable using epoxy seal)
- Scribe or pick
- Medium grit emery paper
- Loctite 271 or equivalent permanent thread lock compound
- Allen wrench set (1/16", 3/32" and 1/8")
- Clean dry cloth
- Safety glasses
- Gloves

2 Installation

⚠ CAUTION: Wear safety glasses and gloves during the termination procedure.

1. With a hacksaw, cut the end of the MI cable square and file the end smooth.

   Ensure that the end of the MI cable is straight for approximately the tail length required plus 6 in (150 mm). Place a mark on the sheath for the tail length required, 12 in (300 mm) is standard.

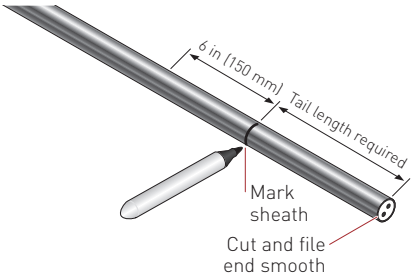

Figure 4: Cut MI cable and mark sheath

2. Place the gland connector and pot on to cable as shown.

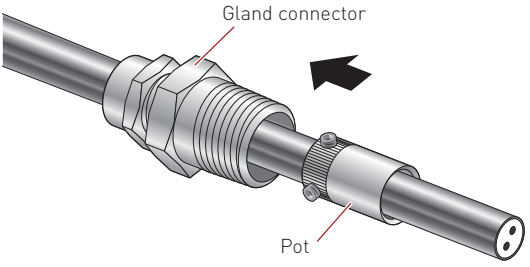

Figure 5: Place gland and pot on to cable

3. Using the tubing cutter, score cable sheath at the mark (see Appendix A for detailed instructions).

2 Installation

Important: Do not cut completely through the cable sheath as this will cause the sheath to curve in towards the conductors.

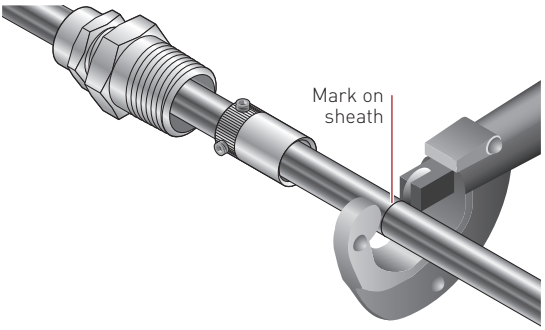

Figure 6: Score cable sheath with tubing cutter

4. Grip cable firmly with Pyrotenax hand vise or hold cable in a bench vise.

Important: Do not remove gland connector and pot from cable.

Use diagonal side cutters to strip the cable sheath, ensuring that the sheath is flared slightly outwards (see Appendix A for detailed instructions).

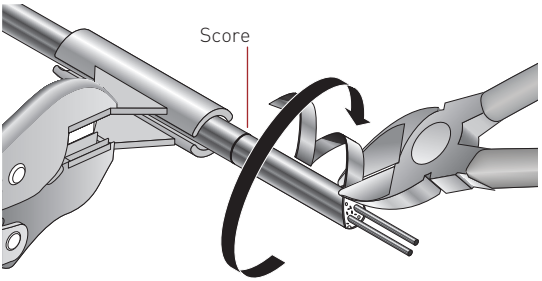

Figure 7: Strip cable sheath with side-cutters

Alternatively, use the T-bar stripping tool to strip the cable sheath ensuring that the cable sheath is flared slightly outwards (see Appendix A for detailed instructions).

2 Installation

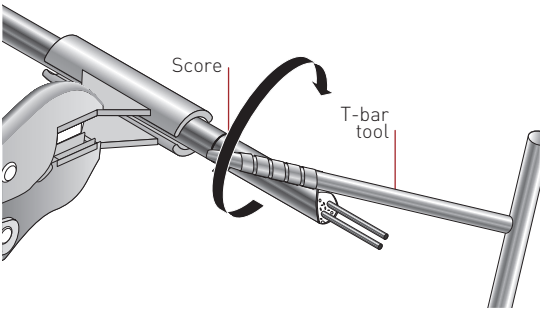

Figure 8: Strip cable sheath with T-bar tool

5. Straighten the conductors, if required, and ensure that they are evenly spaced.

   Wipe around and in between all conductors and end of sheath to remove loose powder.

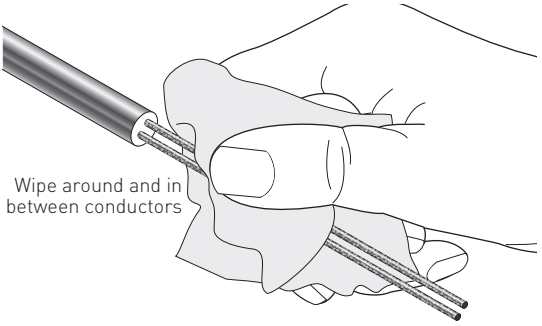

Figure 9: Clean conductors

6. Using emery paper, lightly sand around and in between all conductors for a length of 1 in (25 mm) from the end of cable and the last 1 in (25 mm) of conductors.

   Avoid contaminating the magnesium oxide powder in the exposed cable end with the metal filings; if contaminated, remove with a pick.

2 Installation

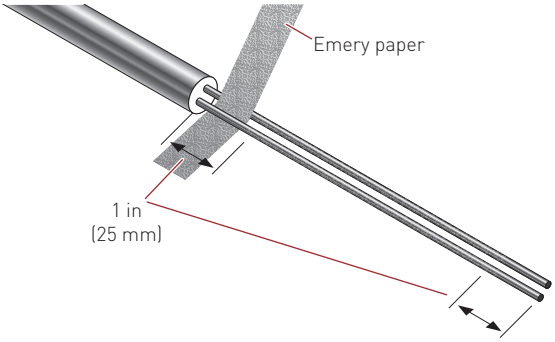

Figure 10: Lightly sand conductors

7. Place a mark at a length "E" (refer to table below) from end of sheath.

TABLE 1

Pot Size	Length "E" to mark
1/2 in (13 mm)	5/16 in (8 mm)
3/4 in (19 mm)	7/16 in (11mm)
1 in (25 mm)	9/16 in (14 mm)
1-1/4 in (32 mm)	5/8 in (16 mm)

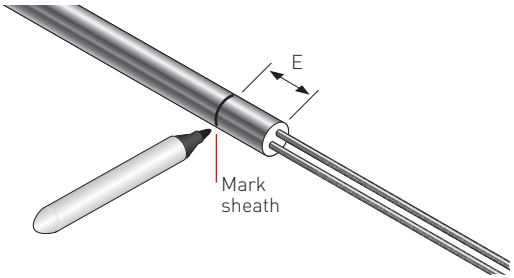

Figure 11: Mark sheath at length E

8. Align back of the pot (previously installed) with mark. Cable end will project approximately 1/8 in (3 mm) into the pot. Tighten set-screws to hold pot in place.

2 Installation

Important: Cable end must project 1/8 in (3 mm) into pot in order to make an effective seal.

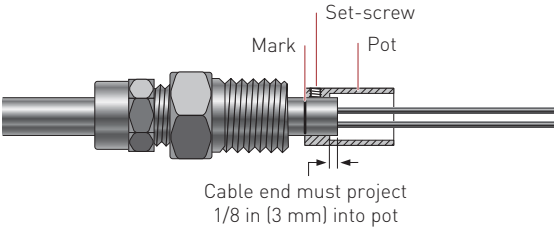

Figure 12: Align pot with mark and tighten set-screws

9. **Optional:** For added mechanical strength, the pot may be brazed to the cable sheath as shown in Appendix E. If brazing the pot to the cable sheath, complete the steps in Appendix E first, then proceed to Step 11, otherwise continue with Step 10.

10. Remove moisture from cable by heating the last 6 in (150 mm) of cable with the mapp gas or oxyacetylene torch. Begin 6 in (150 mm) back from end and stroke flame towards end (see Appendix D for detailed procedure).

CAUTION: Cable will be hot. Allow cable to cool until just warm to the touch, then continue with the steps following to seal the cable end.

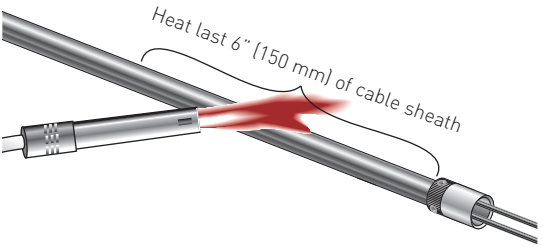

Figure 13: Heat cable to remove moisture

11. Slide spacer disk and insulating sleeving sub-assembly over conductors, anchoring bead end first. If one end of the cable has been terminated, test the end-to-end continuity with a continuity tester to ensure that each conductor has the same color sleeving at both ends. Colored sleeving assemblies will be marked with a red tag for one end and a green tag for the other. A cable should not be terminated with the same colored tag at both ends.

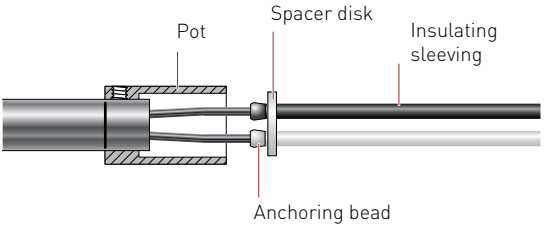

Figure 14: Place insulating sleeving sub-assembly over conductors

12. Using a 500 Vdc megohmmeter, check the insulation resistance (IR) of the cable to ensure it is free of grounds and shorts:
    - Between conductor(s) and sheath and
    - Between conductor pairs

    See Appendix C for detailed test procedure and IR test criteria.

    Once IR readings are satisfactory, immediately apply the appropriate sealing compound as described in the steps following. A delay will cause the IR to drop and the cable must be retested prior to sealing the end.

Important: Opposite end of cable must also be dry and free of grounds and shorts to obtain an acceptable IR reading. Low IR readings should be expected if the opposite end has already been terminated with epoxy sealing compound which has not fully cured (IR will increase once the epoxy has cured).

2 Installation

Important: If neither cable end has yet been terminated and IR readings are low, dry out both ends following the procedure in Appendix D or cut off shorted end and re-test. Apply a temporary moisture resistant seal, such as hot melt glue or adhesive lined heat-shrink tubing, to opposite cable end to prevent moisture absorption.

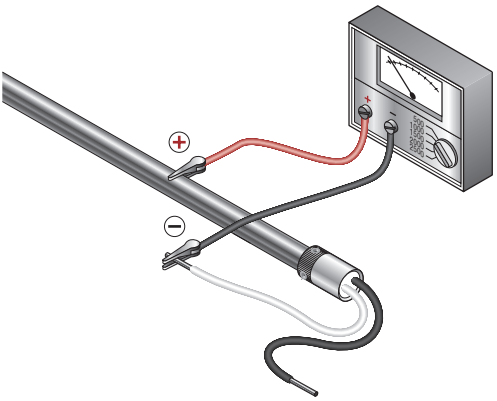

Figure 15: Check insulation resistance

13. For kits supplied with mastic sealing compound, immediately complete Steps 14 through 19.

    For kits supplied with epoxy sealing compound, immediately complete Steps 14a through 19a.

14. Withdraw spacer disk and sleeving sub-assembly slightly to allow sealing compound to be packed in.

    Ensure conductors are spaced an equal distance apart from each other and the inside of the pot.

    The pot should still be warm following Step 10, if not, heat the cable and then the pot with the torch until just warm to the touch before filling with mastic sealing compound.

    Do not allow compound to become contaminated with any foreign matter once package is opened. Press mastic sealing compound into

pot with thumb behind the wrapper to ensure cleanliness. Slightly overfill pot with sealing compound, pressing from one side only to prevent air pockets from forming. Sealing compound will come out the opposite side of the pot when full.

Important: Store mastic sealing compound at room temperature until ready to use.

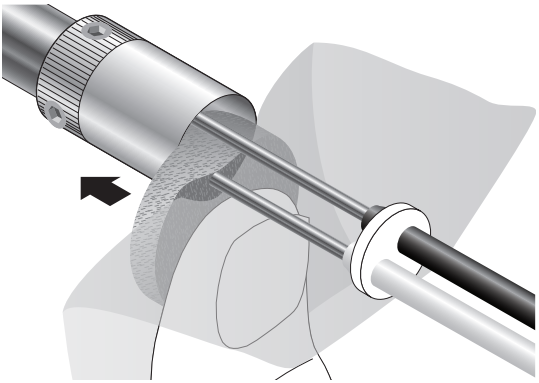

Figure 16: Pack in sealing compound

15. Using a screwdriver or other tool, push spacer disk into open end of the pot, ensuring that the anchoring beads on sleeving butt against inside face of the spacer disk. Do not push on the sleeving as it may be forced back through the cap and butt against the end of the cable, preventing the compound from making an effective seal.

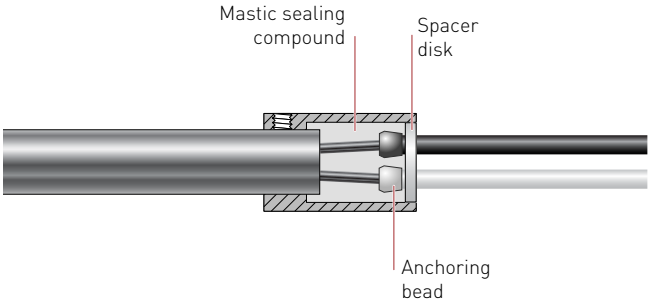

Figure 17: Push spacer disk into the open end of the pot

16. Place the set-screw pot into the body of the crimping and compression tool (hand adjustable type shown) making sure that the sleeving is inserted through the hole in the crimping plate. The spacer disk end of the pot must fit inside the three cone-shaped points on the crimping plate.

Important: Hold the tool firmly, with vise grips if needed, to prevent the tool from turning the pot.

Apply even pressure on the spacer disk by tightening the tool until the spacer disk is snugly seated inside the opening of the pot and the cone-shaped points crimp the side of the pot. This will retain the spacer disk in position. The termination is now complete.

Important: It is normal for the mastic sealing compound to squeeze out the side of the pot as pressure is applied with the crimping and compression tool.

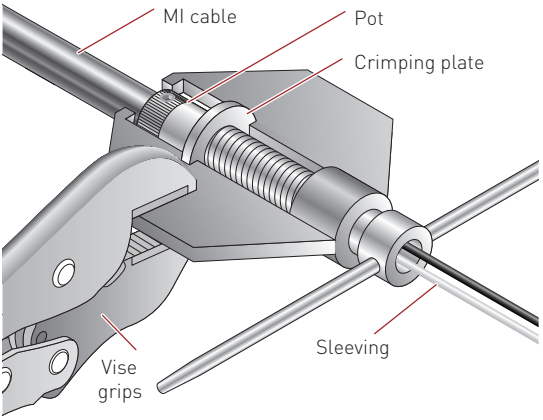

Figure 18: Crimp spacer disk into pot

17. On completion of the termination, check the IR again with the 500 Vdc megohmmeter (see Appendix C).

Important: Under adverse weather conditions, lower IR readings may be encountered.

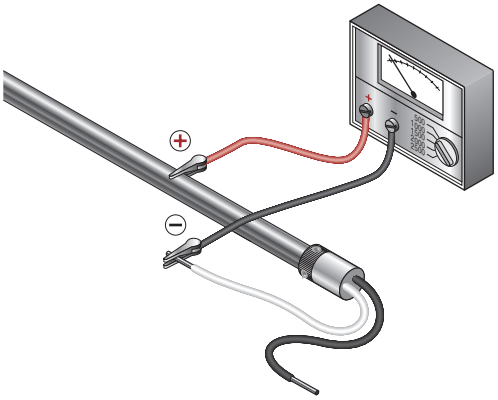

Figure 19: Check insulation resistance

18. Apply a drop of Loctite 271 or equivalent permanent thread lock compound to the top of each set-screw.

2 Installation

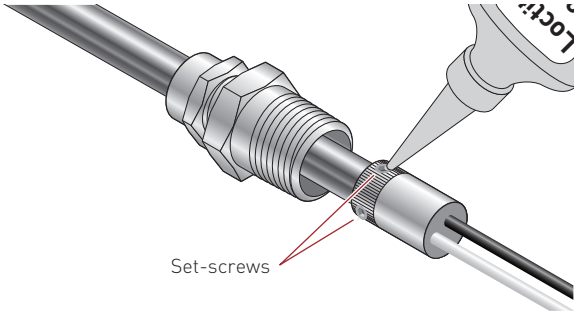

Figure 20: Apply thread lock compound to set-screws

19. Complete the termination at the opposite end following the same procedure, if not already done.

Sealing Cable End Using Epoxy Sealing Compound (continued from Step 13).

14a. Withdraw the spacer disk and sleeving sub-assembly slightly to allow space to fill the pot with epoxy.

Ensure conductors are spaced an equal distance apart from each other and the inside of the pot.

Temporarily wrap 4 to 5 turns of electrical tape around the cable sheath, tightly in contact with the back of the pot. This prevents the epoxy sealing compound from leaking out of the pot.

Prepare epoxy sealing compound in accordance with Steps 1 and 2 of the instructions (see Appendix B for details).

Important: Use epoxy within 10 minutes after mixing.

The pot should still be warm following Step 10 (or procedure in Appendix E), if not, heat the cable and then the pot with the torch until just warm to the touch before filling with epoxy. Be careful not to melt the electrical tape.

2 Installation

Important: To avoid forming bubbles in the epoxy, do not apply heat to the cable or the pot while filling the pot with epoxy or after it has been filled.

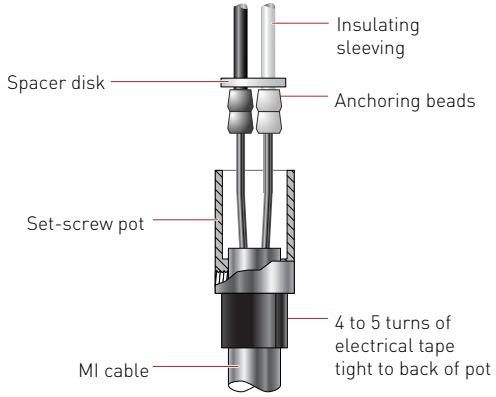

Figure 21: Prepare pot for epoxy

15a. Cut one corner of plastic package containing epoxy to make an opening of 1/8 in (3 mm).

Maintaining cable end vertically, squeeze the epoxy into the pot. Pour it down one side of the pot until it is completely filled.

CAUTION: Avoid skin contact with epoxy compound. If accidental contact occurs, wash skin with mild soap and water.

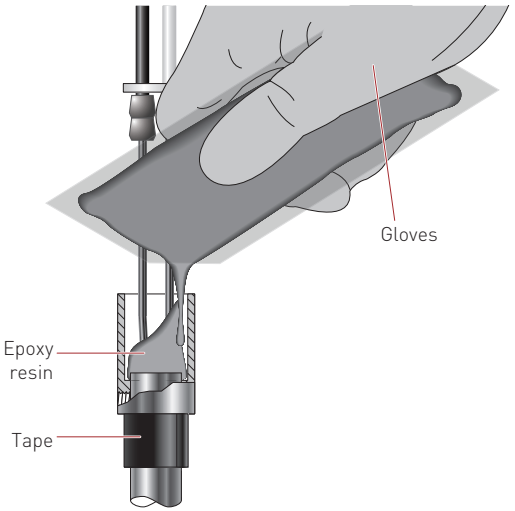

Figure 22: Fill pot with epoxy

16a. Slide sleeving towards pot and adjust its position so that the bottom anchoring bead and half the upper bead are immersed in the epoxy. For multi-conductor cable, maintain proper spacing of conductors with spacer disk and keep disk about 1-1/4 in (30 mm) above the pot.

Important: Bend the conductors slightly so that the sleeving does not slide down into the epoxy.

Allow 16 hours at 65°F (18°C) minimum for the epoxy to cure before moving the termination from the vertical position. At lower temperatures, curing will take longer.

Important: Discard spacer disk after the epoxy cures.

2 Installation

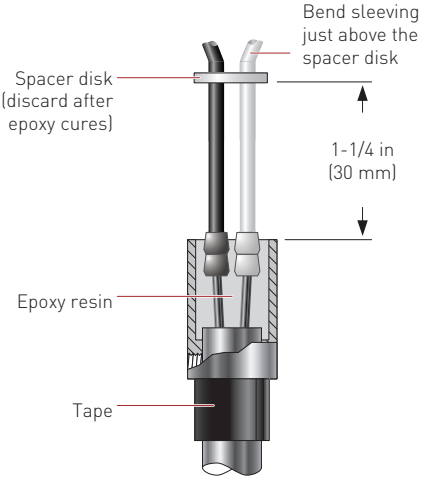

Figure 23: Allow epoxy to cure

17a. Apply a drop of Loctite 271 or equivalent permanent thread lock compound to the top of each set-screw.

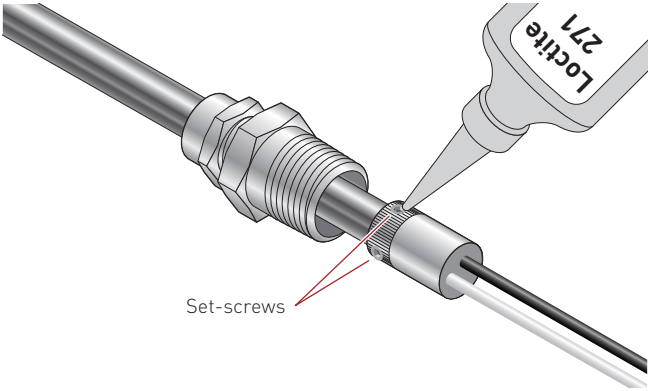

Figure 24: Apply thread lock compound to set-screws

18a. Complete the termination at the opposite end following the same procedure, if not already done.

19a. After the epoxy compound at both ends has fully cured (16 hours), check the IR again with the 500 Vdc megohmmeter (see Appendix C).

Important: Under adverse weather conditions, lower IR readings may be encountered.

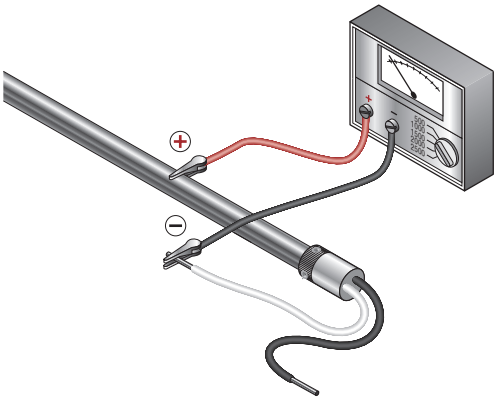

Figure 25: Check insulation resistance

2.2 Crimp-on Tail Termination Procedure

In this procedure the cable end is sealed using the mastic sealing compound or epoxy sealing compound supplied with the termination kit. The tails are formed by removing a short length of the cable sheath and covering the exposed solid conductors with insulating sleeving. Insulated stranded wire tails of the required length, supplied separately or by the customer, are then spliced to the solid conductors using the crimp connectors included in the termination kit.

Figure 26 shows the components of each termination kit. Visually check the parts supplied with the termination kit to identify which sealing compound has been supplied and follow the appropriate steps to terminate the cable.

Figure 26a: Kit parts for mastic sealing compound

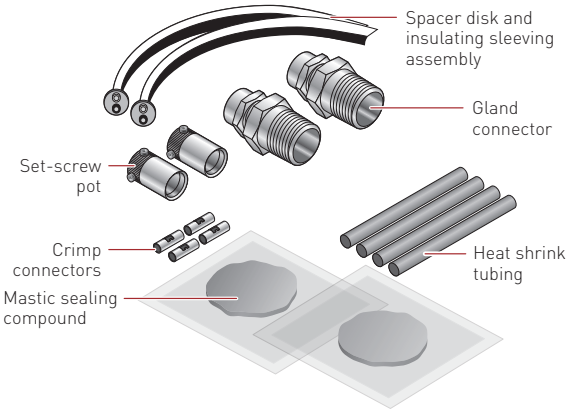

Figure 26b: Kit parts for epoxy sealing compound

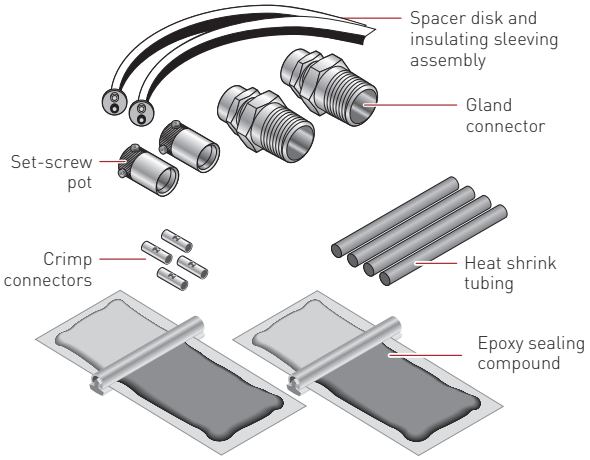

Figure 26: Components supplied in crimp-on tail termination kits

2 Installation

The completed termination using the mastic sealing compound is shown in Figure 27. Store the package containing the mastic sealing compound at room temperature prior to use.

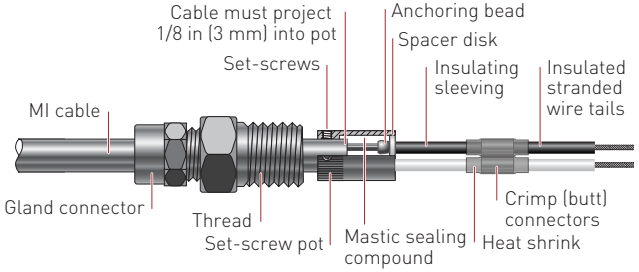

Figure 27: Completed mastic sealing compound termination (cut-away pot shown)

The completed termination using the epoxy sealing compound is shown in Figure 28. The epoxy sealing compound must be stored at temperatures between 65°F to 77°F (18°C to 25°C), and when used, must be maintained at a temperature of 65°F (18°C) minimum for 16 hours to fully cure. Note that the spacer disk is discarded once the epoxy has cured.

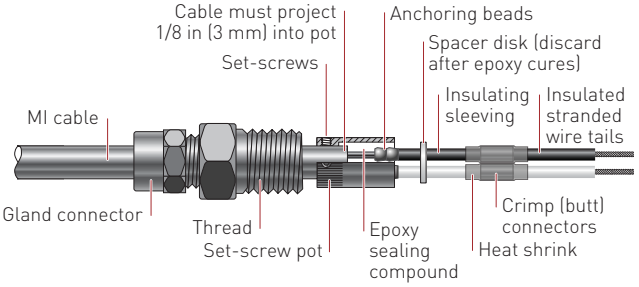

Figure 28: Completed epoxy sealing compound termination (cut-away pot shown)

2 Installation

Tools and Materials Required:

- Pyrotenax T-bar stripping tool
- Pyrotenax hand vise
- Pyrotenax crimping and compression tool (if terminating cable using mastic sealing compound)
- Diagonal (side) cutters
- Hacksaw
- Flat file
- Measuring tape or ruler
- Tubing cutter
- Adjustable pliers/vise grips
- Oxy-acetylene or mapp gas torch (to dry out cable)
- Permanent marker
- 500 Vdc megohmmeter
- Electrical tape (if terminating cable using epoxy seal)
- Wire stripper
- Scribe or pick
- Medium grit emery paper
- Loctite 271 or equivalent permanent thread lock compound
- Allen wrench set (1/16", 3/32" and 1/8")
- Crimping tool (approved for use with supplied crimp connectors)
- Heat gun
- Clean dry cloth
- Safety glasses
- Gloves
- Insulated stranded wire of appropriate AWG (mm^2) size, length and temperature rating – supplied separately or by customer

2 Installation

⚠ CAUTION: Wear safety glasses and gloves during the termination procedure.

1. With hacksaw, cut the end of the MI cable square and file the end smooth.

   Ensure that the end of the MI cable to be terminated is straight for 10 in (250 mm). Place a mark on the sheath 4 in (100 mm) from end of the cable; this is the length of sheath to strip.

Important: If a longer length of solid conductor tail is required, adjust the dimensions shown accordingly and strip the required length of cable sheath.

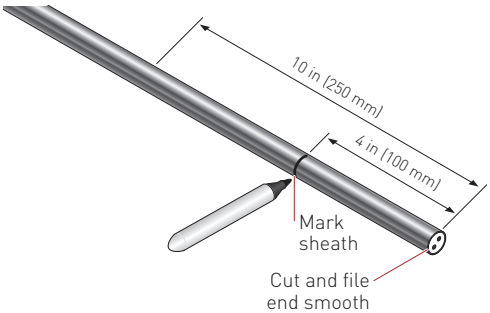

Figure 29: Cut MI cable and mark sheath

2. Follow Steps 2 through 19 of the "Strip-back Tail Termination Procedure" to terminate the cable using the mastic sealing compound (page 7), then continue with Step 3 below.

   Follow Steps 2 through 19a of the "Strip-back Tail Termination Procedure" to terminate the cable using the epoxy sealing compound (page 7), then continue with Step 3 below.

3. If the cable ends were terminated using the epoxy sealing compound, proceed only after the epoxy has fully cured and discard the spacer disk.

   Strip just enough insulating sleeving so that the end of the solid conductor touches the center-

stop in the crimp connector (the sleeving supplied with the termination kit may be longer than the solid conductor tails).

Strip the insulation from the insulated stranded wire (not shown) just enough to touch the center stop in the crimp connector.

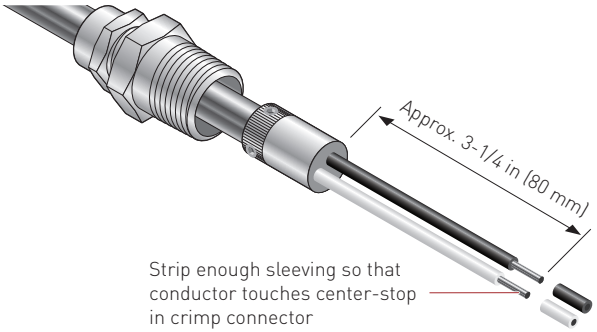

Figure 30: Strip insulating sleeving

4. Insert the stripped conductors into the crimp connector and crimp the connector using a crimping tool which has been approved by a certifying agency for use with the connector.

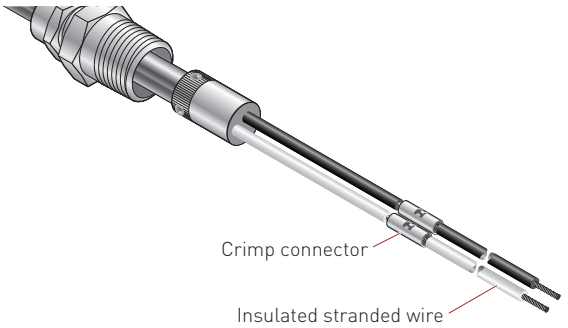

Figure 31: Crimp the connectors

5. Place supplied heat shrink tubing over the crimp connector ensuring the heat shrink overlaps the insulating sleeving and the insulated stranded wire tail equally and apply heat to shrink the tubing in place over the connector. Take care not to damage the heat shrink, insulating sleeving, or insulated stranded wire when applying heat.

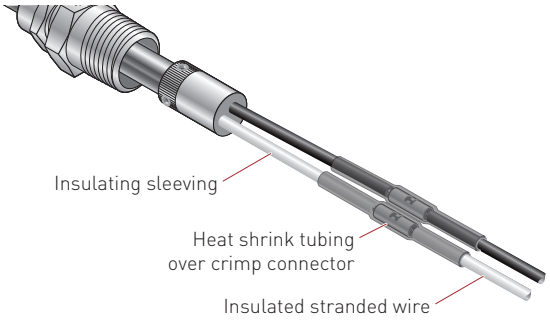

Figure 32: Apply heat to shrink tubing

6. Complete the termination at the opposite end following the same procedure, if not already done.

2.3 Brazed-on Tail Termination Procedure

In this procedure, the cable end is sealed using the epoxy sealing compound supplied with the termination kit. The termination kit may be supplied with insulated stranded wire tails or with bare stranded wire tails and insulating sleeving. For both terminations, the stranded wire tails are silver soldered (brazed) to the solid MI conductor and the pot is silver soldered to the cable sheath. Follow the appropriate steps to complete the termination.

Figure 33 shows the components of each termination kit. Visually check the parts supplied with the termination kit to identify which type of tails have been supplied and follow the appropriate steps to terminate the cable.

2 Installation

Important: As an alternative to the brazed-on pot, termination kits may be supplied with set-screw pots as shown in Section 2.1, Figure 1. These pots do not have to be silver soldered to the cable sheath.

To install the set-screw pot when using insulated stranded wire tails, replace Step 11, Step 12, and Step 13, with Step 8 and Step 10 of Section 2.1.

To install the set-screw pot when using bare stranded wire tails and insulating sleeving, replace Steps 11a, 12a, and 13a, with Step 8 and Step 10 of Section 2.1.

Figure 33a: Brazed-on tails for insulated stranded wire

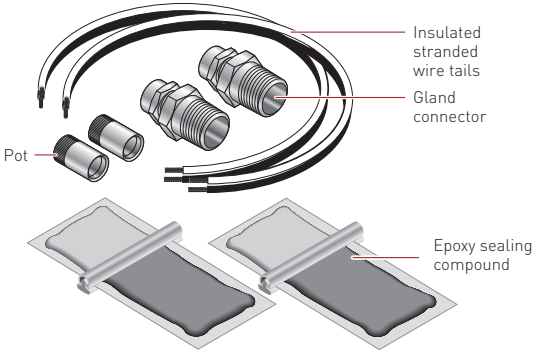

Figure 33b: Brazed-on tails for bare stranded wire and insulating sleeving

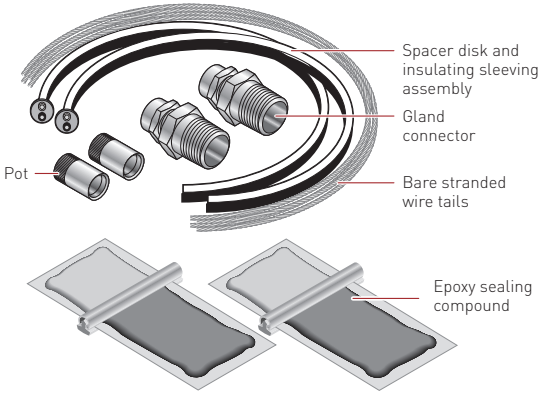

Figure 33: Components supplied in brazed-on tail termination kits

Figure 34 shows the completed termination using insulated stranded wire tails. Figure 35 shows the completed termination using bare stranded wire tails and insulating sleeving. The epoxy sealing compound must be stored at temperatures between 65°F to 77°F (18°C to 25°C), and when used, must be maintained at a temperature of 65°F (18°C) minimum for 16 hours to fully cure. Note that the spacer disk is discarded once the epoxy has cured.

2 Installation

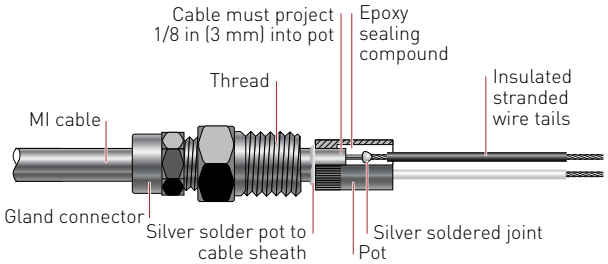

Figure 34: Completed termination using insulated stranded wire tails (cut-away pot shown)

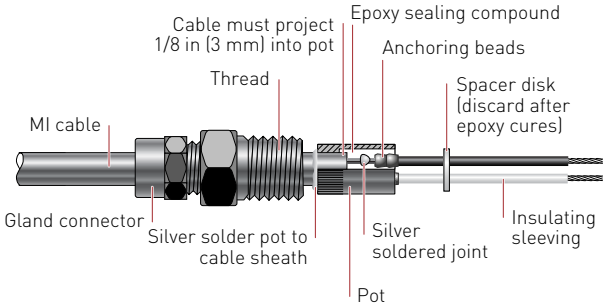

Figure 35: Completed termination using bare stranded wire tails and insulating sleeving (cut-away pot shown)

2 Installation

Tools and Materials Required:

- Pyrotenax hand vise
- Diagonal (side) cutters
- Hacksaw
- Flat file
- Tubing cutter
- Workbench
- Measuring tape or ruler
- Permanent marker
- Micrometer
- 500 Vdc megohmmeter
- Wire stripper
- Scribe or pick
- Medium grit emery paper
- Clean dry cloth
- Safety glasses
- Gloves
- Oxy-acetylene torch with Victor No. 0 welding tip (or equivalent)
- Handy & Harman 1/16 in (1.6 mm) or 1/32 in (0.8 mm) diameter "Braze 560" silver solder (or equivalent)
- Prostar silver brazing flux (or equivalent)
- Drill press and appropriately sized drill bits (required if the pot was not pre-drilled at the factory)

⚠ CAUTION: Wear safety glasses and gloves during the termination procedure.

1. Prepare bare or insulated stranded wire tails for use later. If insulated stranded wire is supplied in the termination kit, strip 3/16 to 1/4 in (5 to 6.4 mm) of insulation from ends.

Important: Two tails of the same color are required; one for each end of each conductor in the cable.

2 Installation

Apply flux to one end of a group of conductors. Align group along edge of workbench and "tin" using oxy-acetylene torch and silver solder ensuring that a small "ball" of solder forms on the end of each conductor. If insulated stranded wire is supplied with the kit, take care not to melt the insulation.

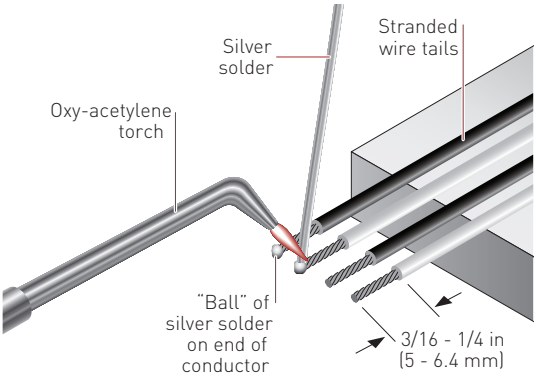

Figure 36: Tin the ends of the conductors

2. With hacksaw, cut the end of the MI cable square and file end smooth. Make sure face of conductors is completely clean of all foreign material.

   Use emery paper to polish all around surface of cable sheath from end to about 2 in (50 mm) back from end (sheath must be clean for brazing).

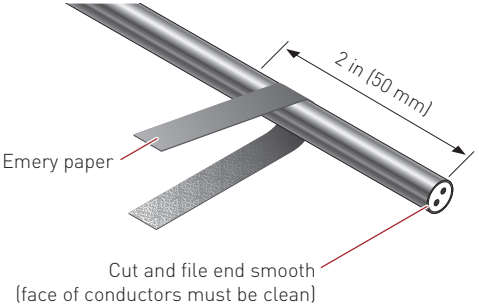

Figure 37: Polish surface of cable sheath

3. Ensure that the end of the MI cable to be terminated is straight for approximately 9 in (230 mm). Place a mark on the sheath 3/16 in (5 mm) from end of the cable; this is the length of sheath to strip.

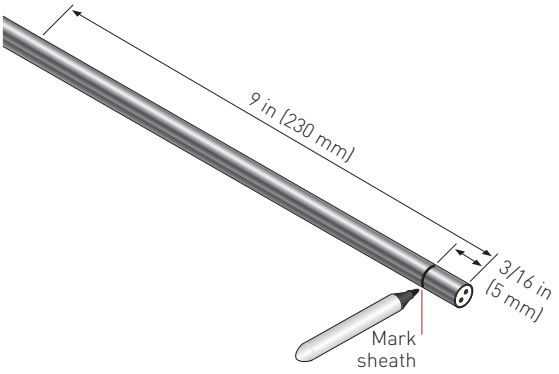

Figure 38: Cut MI cable and mark sheath

4. Place the gland connector and the pot on to cable as shown.

Important: If the pot does not fit over the MI cable, measure the cable diameter using a micrometer and drill the hole in the pot to a size that is 0.002 to 0.004 in (0.05 to 0.1 mm) larger than the cable diameter using a drill press and appropriately sized drill bits.

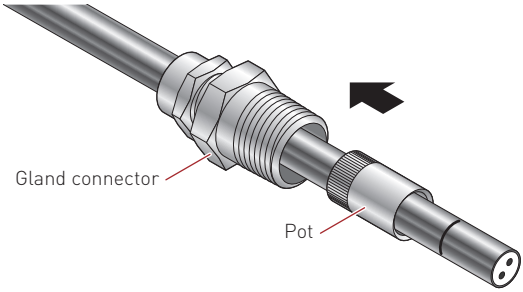

Figure 39: Place gland and pot on to cable

5. Using the tubing cutter, score cable sheath at the mark (see Appendix A for detailed instructions).

Important: Do not cut completely through the cable sheath as this will cause the sheath to curve in towards the conductors.

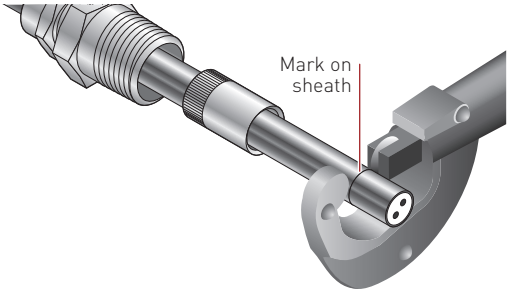

Figure 40: Score cable sheath with tubing cutter

6. Grip cable firmly with Pyrotenax hand vise or hold cable in a bench vise if available.

Important: Do not remove gland assembly and pot from cable.

Use diagonal side cutters to strip the cable sheath, ensuring that the sheath is flared slightly outwards (see Appendix A for detailed instructions).

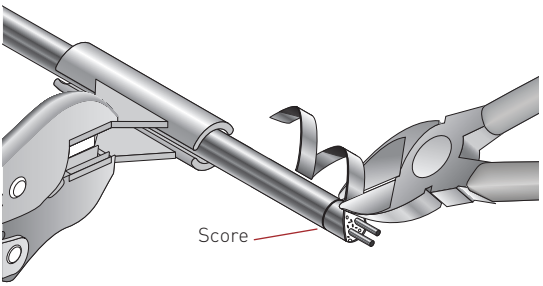

Figure 41: Strip cable sheath with side-cutters

7. If the termination kit is supplied with insulated stranded wire tails, continue with Step 8.

   If the termination kit is supplied with bare stranded wire tails and insulating sleeving, continue with Step 8a.

8. Lightly coat only the face of the solid conductor(s) with flux. Do not allow the magnesium oxide at the end of the cable to become contaminated with flux; if contaminated, you must cut off 1/2 in (13 mm) of cable and start over from Step 2.

   If one end of the cable has been terminated, test the end-to-end continuity with a continuity tester to ensure that each conductor has the same color stranded wire tails at both ends.

   Next, braze the appropriate color insulated stranded wire (prepared in Step 1), to the face of each solid conductor by applying heat to the solidconductor. This will draw the solder "ball" from the stranded conductor to the solid conductor making a strong joint.

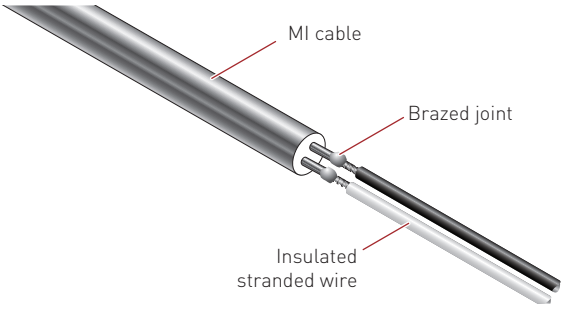

Figure 42: Braze the conductors

9. Using a thin strip of emery paper, lightly sand around and in between all conductors to remove magnesium oxide powder from solid conductors and any excess flux from brazed joint.

   Avoid contaminating the magnesium oxide powder in the exposed cable end with metal filings; if contaminated, remove with a pick.

2 Installation

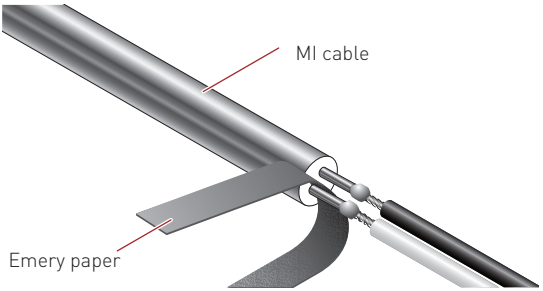

Figure 43: Remove flux and lightly sand conductors

10. Place a mark at a length "E" (refer to table below) from end of sheath.

TABLE 2

Pot Size	Length "E" to mark
1/2 in (13 mm)	5/16 in (8 mm)
3/4 in (19 mm)	7/16 in (11 mm)
1 in (25 mm)	9/16 in (14 mm)
1-1/4 in (32 mm)	5/8 in (16 mm)

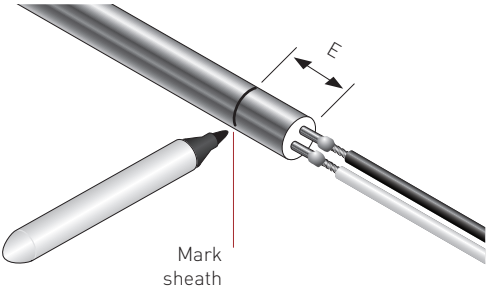

Figure 44: Mark sheath at length E

11. Align back of the pot (previously installed) with mark. Cable end will project approximately 1/8 in (3 mm) into the pot.

Important: Cable end must project 1/8 in (3 mm) into the pot in order to make an effective seal.

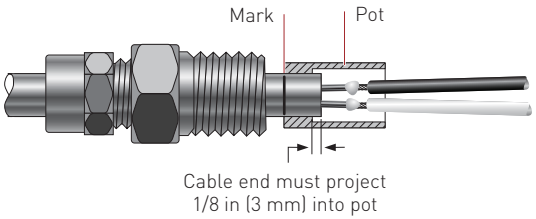

Figure 45: Align back of pot with mark

12. Apply flux to the cable sheath and back of the pot where it meets the cable sheath. This prevents oxidation of the metals during the next step.

    Next, remove moisture from cable by heating the last 6 in (150 mm) of cable with the oxy-acetylene torch. Begin 6 in (150 mm) back from end and stroke flame towards the end (see Appendix D for detailed procedure).

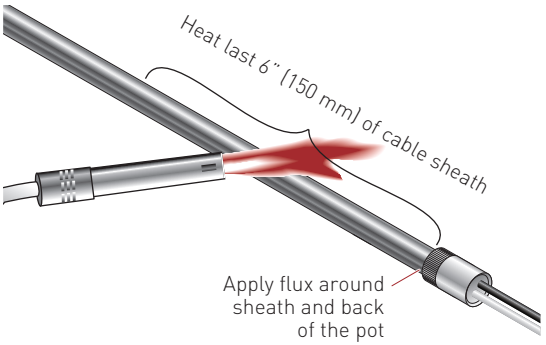

Figure 46: Heat cable to remove moisture

13. Braze pot to cable sheath while the cable is still hot. Ensure silver solder flows all around the pot and sheath by moving the flame around the cable.

Important: To make a good quality solder joint, the silver solder rod must be coated with flux at all times. Dip in flux as many times as necessary until brazing operation is complete.

Important: Take care when heating the pot since excess heat will cause the solder at the conductor joints to melt.

CAUTION: Cable will be hot. Allow cable to cool until just warm to the touch, then continue with the steps following to seal the cable end.

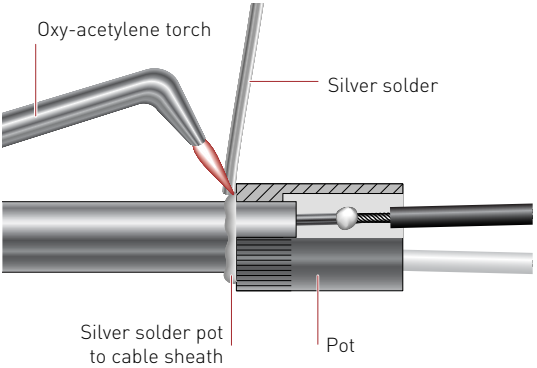

Figure 47: Braze pot to cable sheath

14. Using a 500 Vdc megohmmeter, check the insulation resistance (IR) of the cable to ensure it is free of grounds and shorts:
    - Between conductor(s) and sheath and
    - Between conductor pairs

    See Appendix C for detailed test procedure and IR test criteria.

    Once IR readings are satisfactory, immediately seal the cable end as described in the steps following. A delay will cause the IR to drop and the cable must be retested prior to sealing the end.

Important: Opposite end of cable must also be dry and free of grounds and shorts to obtain an acceptable IR reading. Low IR readings should be expected if the opposite end has already been terminated with epoxy sealing compound which has not fully cured (IR will increase once the epoxy has cured).

Important: If neither cable end has yet been terminated and IR readings are low, dry out both ends following the procedure in Appendix D or cut off shorted end and re-test. Apply a temporary moisture resistant seal, such as hot melt glue or adhesive lined heat-shrink tubing, to opposite cable end to prevent moisture absorption.

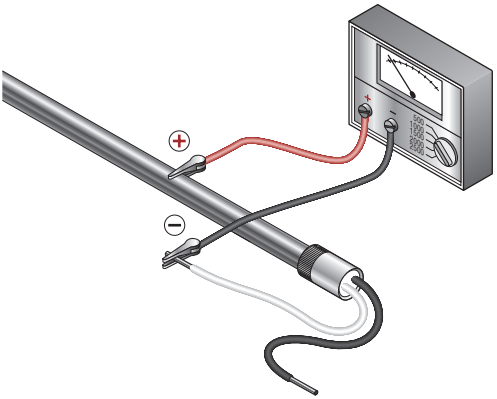

Figure 48: Check insulation resistance

15. Ensure conductors are spaced an equal distance apart from each other and the inside of the pot.

    Prepare epoxy sealing compound in accordance with Steps 1 and 2 of the instructions (see Appendix B for details).

Important: Use epoxy within 10 minutes after mixing.

    The pot should still be warm following Step 13, if not, heat the cable and then the pot with the torch until just warm to the touch before filling with epoxy.

Important: To avoid forming bubbles in the epoxy, do not apply heat to the cable and the pot during or after the pot has been filled with epoxy.

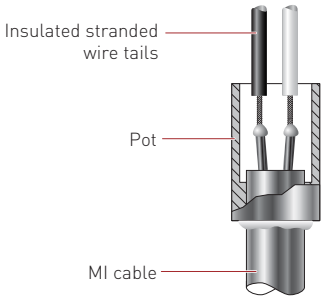

Figure 49: Prepare pot for epoxy

16. Cut one corner of plastic package containing epoxy to make an opening of 1/8 in (3 mm).

    Maintaining cable end vertically, squeeze the epoxy into the pot. Pour it down one side of the pot until it is completely filled.

⚠ CAUTION: Avoid skin contact with epoxy compound. If accidental contact occurs, wash skin with mild soap and water.

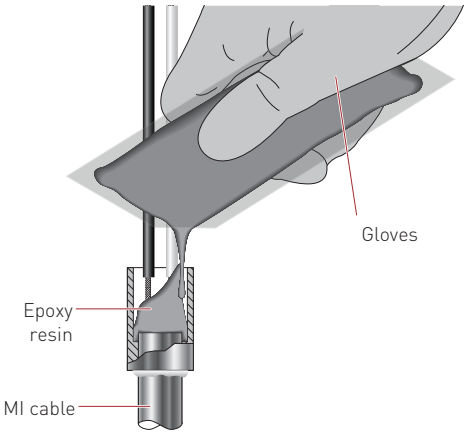

Figure 50: Fill pot with epoxy

17. Allow 16 hours at 65°F (18°C) minimum for the epoxy to cure before moving the termination from the vertical position. At lower temperatures, curing will take longer.

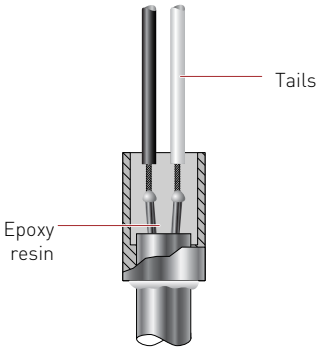

Figure 51: Allow epoxy to cure

18. Complete the termination at the opposite end following the same procedure, if not already done.

19. After the epoxy compound at both ends has fully cured (16 hours), check the IR again with the 500 Vdc megohmmeter (see Appendix C).

Important: Under adverse weather conditions, lower IR readings may be encountered.

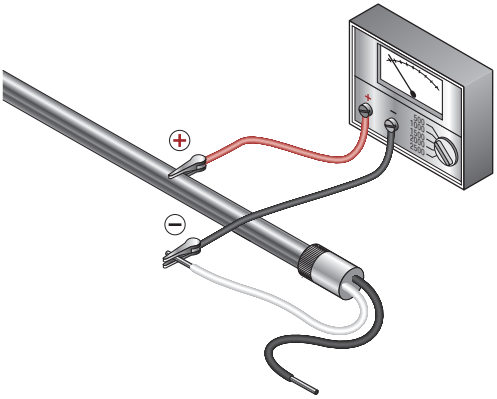

Figure 52: Check insulation resistance

Bare Stranded Wire Tails and Insulating Sleeving Termination (continued from Step 7)

8a. Lightly coat only the face of the solid conductor(s) with flux. Do not allow the magnesium oxide at the end of the cable to become contaminated with flux; if contaminated, you must cut off 1/2 in (13 mm) of cable and start over from Step 2.

Next, braze the bare stranded wire (prepared in Step 1), to the face of each solid conductor by applying heat to the solid conductor. This will draw the solder "ball" from the stranded conductor to the solid conductor making a strong joint.

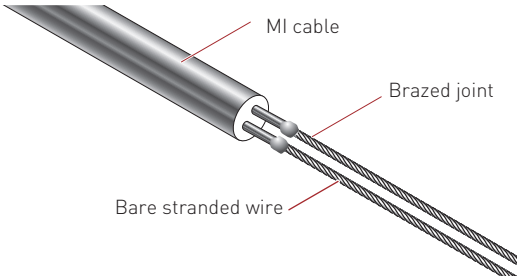

Figure 53: Braze the conductors

9a. Using a thin strip of emery paper, lightly sand around and in between all conductors to remove magnesium oxide powder from solid conductors and any excess flux from brazed joint.

Avoid contaminating the magnesium oxide powder in the exposed cable end with metal filings; if contaminated, remove with a pick.

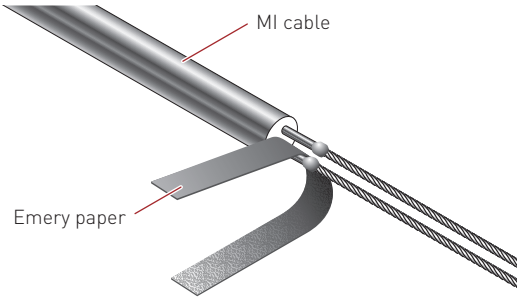

Figure 54: Remove flux and lightly sand conductors

10a. Place a mark at a length "E" (refer to table below) from end of sheath.

TABLE 3

Pot Size	Length "E" to mark
1/2 in (13 mm)	5/16 in (8 mm)
3/4 in (19 mm)	7/16 in (11 mm)
1 in (25 mm)	9/16 in (14 mm)
1-1/4 in (32 mm)	5/8 in (16 mm)

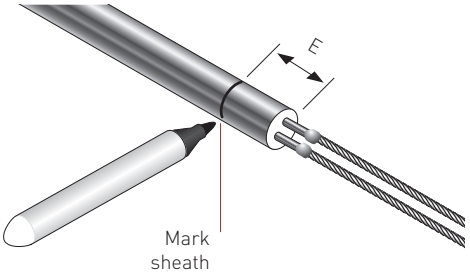

Figure 55: Mark sheath at length E

11a. Align back of the pot (previously installed) with mark. Cable end will project approximately 1/8 in (3 mm) into the pot.

Important: Cable end must project 1/8 in (3 mm) into the pot in order to make an effective seal.

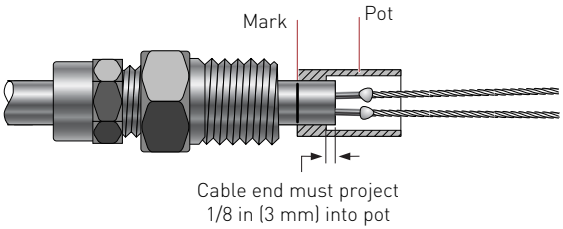

Figure 56: Align back of pot with mark

12a. Apply flux to the cable sheath and back of the pot where it meets the cable sheath. This prevents oxidation of the metals during the next step.

Next, remove moisture from cable by heating the last 6 in (150 mm) of cable with the oxy-acetylene torch. Begin 6 in (150 mm) back from end and stroke flame towards end (see Appendix D for detailed procedure).

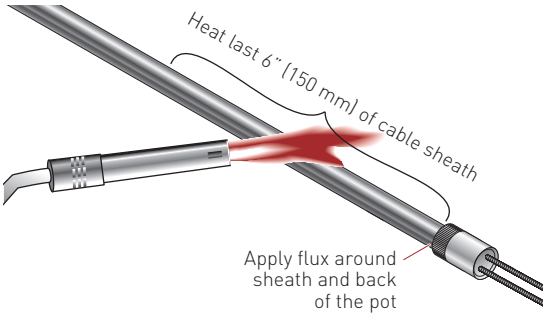

Figure 57: Heat cable to remove moisture

13a. Braze pot to cable sheath while the cable is still hot. Ensure silver solder flows all around the pot and sheath by moving the flame around the cable.

Important: To make a good quality solder joint, the silver solder rod must be coated with flux at all times. Dip in flux as many times as necessary until brazing operation is complete.

Important: Take care when heating the pot since excess heat will cause the solder at the conductor joints to melt.

CAUTION: Cable will be hot. Allow cable to cool until just warm to the touch, then continue with the steps following to seal the cable end.

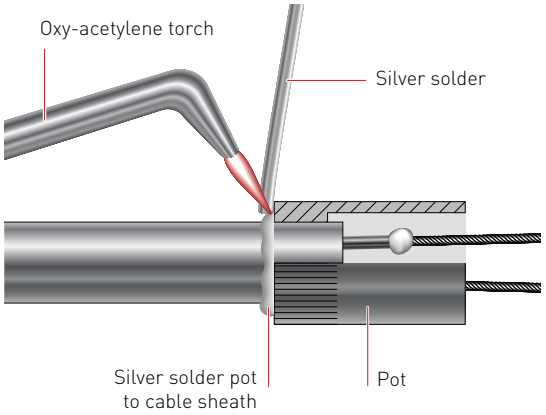

Figure 58: Braze pot to cable sheath

14a. Using a 500 Vdc megohmmeter, check the insulation resistance (IR) of the cable to ensure it is free of grounds and shorts:
- Between conductor(s) and sheath and
- Between conductor pairs

See Appendix C for detailed test procedure and IR test criteria.

Once IR readings are satisfactory, immediately seal the cable end as described in the steps fol-

lowing. A delay will cause the IR to drop and the cable must be retested prior to sealing the end.

Important: Opposite end of cable must also be dry and free of grounds and shorts to obtain an acceptable IR reading. Low IR readings should be expected if the opposite end has already been terminated with epoxy sealing compound which has not fully cured (IR will increase once the epoxy has cured).

Important: If neither cable end has yet been terminated and IR readings are low, dry out both ends following the procedure in Appendix D or cut off shorted end and re-test. Apply a temporary moisture resistant seal, such as hot melt glue or adhesive lined heat-shrink tubing, to opposite cable end to prevent moisture absorption.

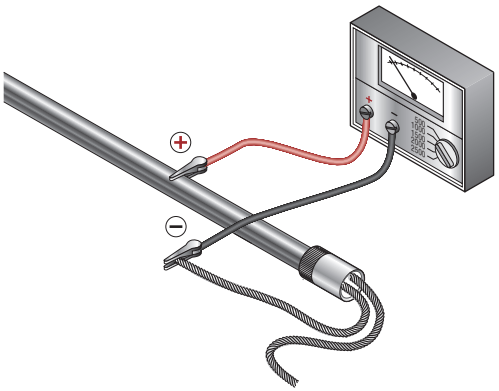

Figure 59: Check insulation resistance

15a. Slide spacer disk and insulating sleeving sub-assembly over the bare stranded wire, anchoring bead end first. If one end of the cable has been terminated, test the end-to-end continuity with a continuity tester to ensure that each conductor has the same color sleeving at both ends. Colored sleeving assemblies will be marked with a red tag for one end and a green tag for the other. One cable should not be terminated with the same colored tag at both ends.

Ensure conductors are spaced an equal distance apart from each other and the inside of the pot.

Prepare epoxy sealing compound in accordance with Steps 1 and 2 of the instructions (see Appendix B for details).

Important: Use epoxy within 10 minutes after mixing.

The pot should still be warm following Step 13a, if not, heat the cable and then the pot with the torch until just warm to the touch before filling with epoxy.

Important: To avoid forming bubbles in the epoxy, do not apply heat to the cable and the pot during or after the pot has been filled with epoxy.

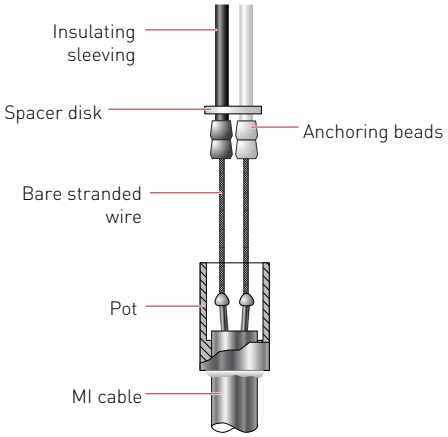

Figure 60: Prepare pot for epoxy

16a. Cut one corner of the plastic package containing epoxy to make an opening of 1/8 in (3 mm).

Maintaining cable end vertically, squeeze the epoxy into the pot. Pour it down one side of the pot until it is completely filled.

2 Installation

⚠ CAUTION: Avoid skin contact with epoxy compound. If accidental contact occurs, wash skin with mild soap and water.

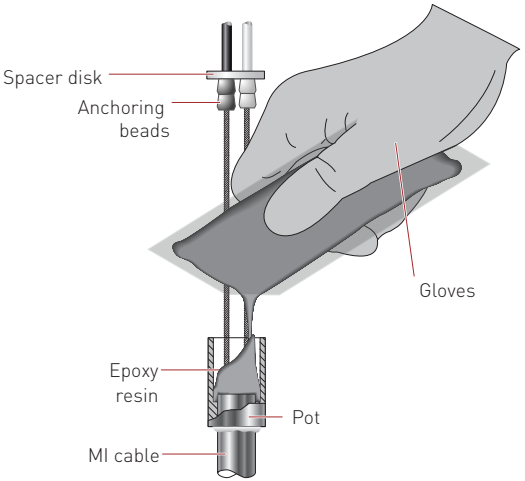

Figure 61: Fill pot with epoxy

17a. Slide sleeving towards the pot and adjust its position so that the bottom anchoring bead and half the upper bead are immersed in the epoxy. For multi-conductor cable, maintain proper spacing of conductors with spacer disk and keep disk about 1-1/4 in (30 mm) above the pot.

Important: Bend the conductors slightly so that the sleeving does not slide down into the epoxy.

Allow 16 hours at 65°F (18°C) minimum for the epoxy to cure before moving the termination from the vertical position. At lower temperatures, curing will take longer.

Important: Discard spacer disk after the epoxy cures.

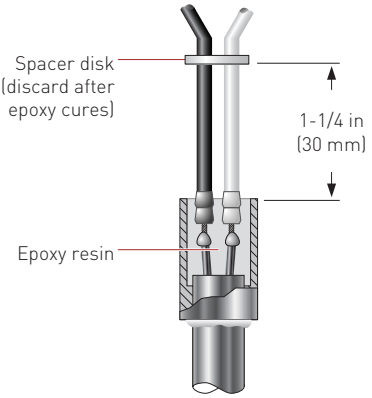

Figure 62: Allow epoxy to cure

18a. Complete the termination at the opposite end following the same procedure, if not already done.

19a. After the epoxy compound at both ends has fully cured (16 hours), check the IR again with the 500 Vdc megohmmeter (see Appendix C).

Note: Under adverse weather conditions, lower IR readings may be encountered.

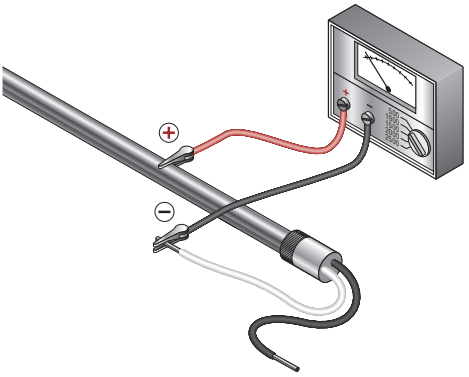

Figure 63: Check insulation resistance

3 Troubleshooting Guide

Symptom	
Insulation resistance is less than expected	
Short circuits and direct earth faults	

3 Troubleshooting Guide

Probable Causes	Corrective Action
1. Rain or high humidity.	(1) Dry tails and face of seal. Inspect power connection box for moisture or signs of tracking. Dry out connections and retest.
2. Nicks or cuts in the cable sheath, with moisture present. 3. Kinked or crushed cable. 4. Arcing created by damage to the cable. 5. Welding splatter.	(2, 3, 4, 5) Visually inspect or fault locate cable to find damaged section of cable. Repair or replace cable or contact Pentair Thermal Management technical support for assistance.
6. Presence of moisture in termination or temporary seal.	(6) Remove termination or temporary seal. Dry out cable following the procedure in Appendix D. Replace termination or seal.
7. Damaged termination or temporary seal.	(7) Replace termination or seal.
1. Physical damage to cable is causing a direct short from conductor to sheath.	(1) Check for visual indications of damage around any area where there may have been maintenance work. Repair or replace damaged cable and/or terminations.
2. Misalignment of the conductors within the seal or incorrect and untidy completion of the sheath stripping procedure during termination.	(2) Remake termination.
3. Conductors shorted to sheath when cut at factory (only for unterminated cables).	(3) Remove short and reseal end.

4 Appendixes

Appendix A: Stripping Pyrotenax® Alloy 825 Sheath MI Cable

Using diagonal cutters

Measure, from cable end, length of cable sheath to strip and mark sheath with marking pen. Use a tube cutter to score around the sheath at the mark. This will cause the sheath to peel away at the score providing a smooth end when the sheath is stripped. The correct depth of score is half the thickness of the sheath.

Do not cut completely through the cable sheath as this will cause the sheath to curve inwards toward the conductor(s).

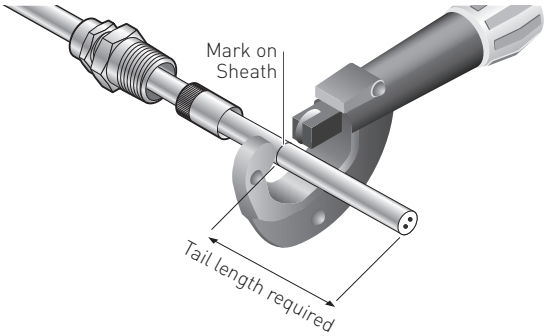

Figure 64: Score cable sheath with tubing cutter

Grip the edge of the sheath between the jaws of the side cutters and twist clockwise (twist counter-clockwise if left-handed), then take a new grip and rotate through a small angle.

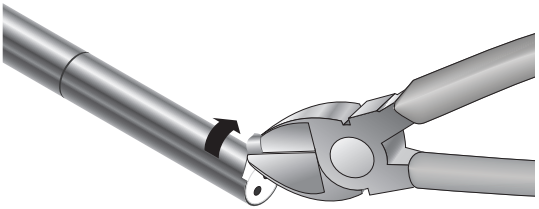

Figure 65: Cut end of sheath and twist clockwise

Continue this motion in a series of short "rips," keeping the side cutters at about 45° to the line of the cable, removing sheath spirally. Remove compacted powder insulation to expose conductors.

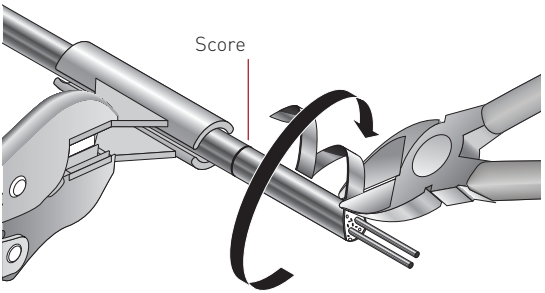

Figure 66: Remove sheath and compacted powder insulation

Continue removing the sheath to the score mark. When about to break into the score, bring side cutters to right angle with cable. Finish off with point of side cutters held parallel to the cable. The sheath will peel away leaving a clean cut when the score mark is reached.

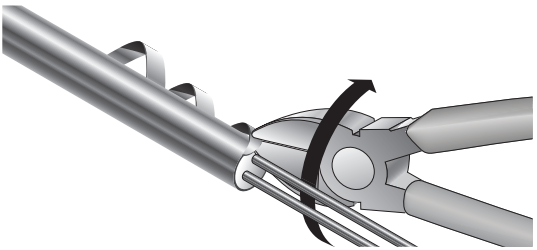

Figure 67: Finish removing sheath at score mark

The cable sheath is correctly stripped, with the sheath flared slightly outwards, as shown in (a)

In (b) the sheath is neither flared outwards nor beveled inwards, but is acceptable.

Ensure that the sheath is not curved or beveled inward as shown in (c). This will occur if the score

made with the tube cutter is too deep. In this case, remove a further 1/4 in (6 mm) of sheath.

Cable is now ready to be sealed.

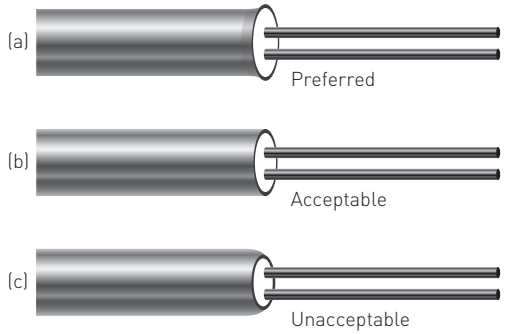

Figure 68: Examples of stripped cable

Using the T-bar stripping tool

Measure, from cable end, length of cable sheath to strip and mark sheath with marking pen. Use a tube cutter to score around the sheath at the mark. This will cause the sheath to peel away at the score providing a smooth end when the sheath is stripped. The correct depth of score is half the thickness of the sheath.

Do not cut completely through the cable sheath as this will cause the sheath to curve inwards toward the conductor(s).

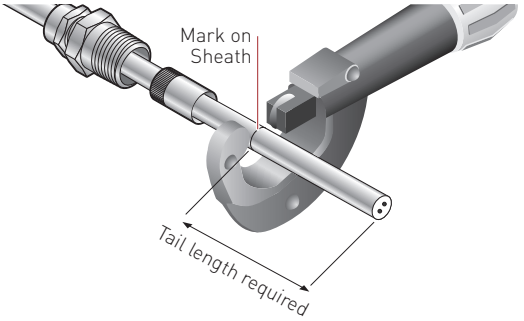

Figure 69: Score cable sheath with tubing cutter

Cut the end of the sheath of the MI cable with side cutters as shown and peel sheath to give approximately 5/8 in (15 mm) tag. Straighten the tag and insert into slot in T-bar stripping tool.

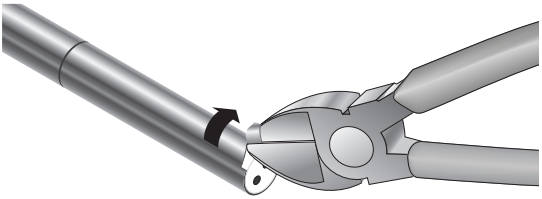

Figure 70: Cut end of sheath to make tag

Hold T-bar tool at 45° angle, twist handle and revolve tool around the cable carefully.

Continue twisting the tool around the cable maintaining a 45° angle to the line of the cable allowing the metal turnings to spiral along the stripping tool. Remove compacted powder insulation to expose conductors.

When peeling a long length of cable, cut and remove the metal turnings frequently.

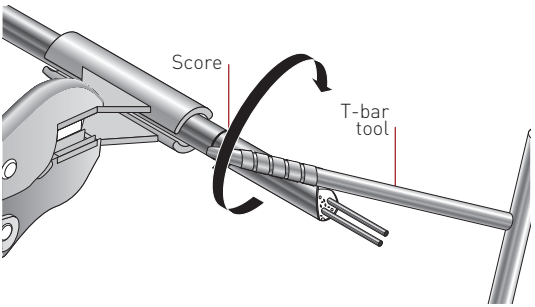

Figure 71: Strip cable sheath with T-bar tool

Continue removing the sheath to the score mark using the T-bar stripping tool. When about to break into the score, use side cutters and bring to right angle with cable. Finish off with point of side cutters held parallel to the cable. The sheath will peel away leaving a clean cut when the score mark is reached.

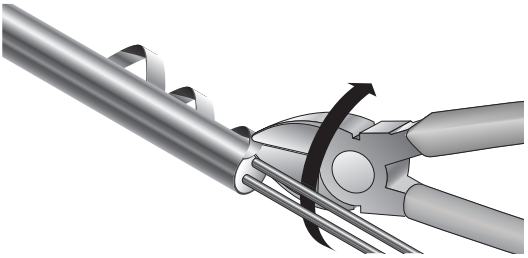

Figure 72: Finish removing sheath at score mark

The cable sheath is correctly stripped, with the sheath flared slightly outwards, as shown in (a).

In (b) the sheath is neither flared outwards nor beveled inwards, but is acceptable.

Ensure that the sheath is not curved or beveled inward as shown in (c). This will occur if the score made with the tube cutter is too deep. In this case, remove a further 1/4 in (6 mm) of sheath.

Cable is now ready to be sealed.

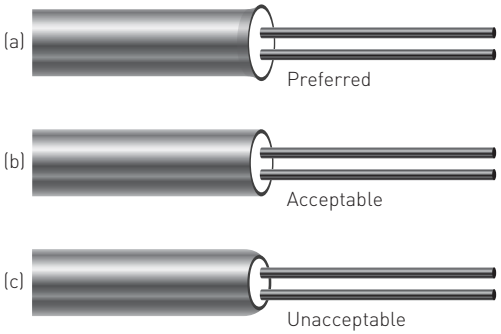

Figure 73: Examples of stripped cable

4 Appendixes

Appendix B: Epoxy Compound Mixing Instructions

⚠ CAUTION: Avoid skin contact with epoxy compound (wear safety glasses and protective gloves). If accidental contact occurs, wash skin with mild soap and water.

TABLE 4

	Number of Packages Required			
Termination Size	**1 Seal**	**2 Seals**	**3 Seals**	**4 Seals**
1/2"	1	1	1	2
3/4"	1	2	3	4
1"	2	3	5	6
1-1/4"	2	4	5	7

Storage temperature: 65°F to 77°F (18˚C to 25˚C)

1. Ensure package is 65°F (18°C) minimum, 120°F (49°C) maximum before using.

   Open foil envelope and remove plastic clamp separating resin from hardener.

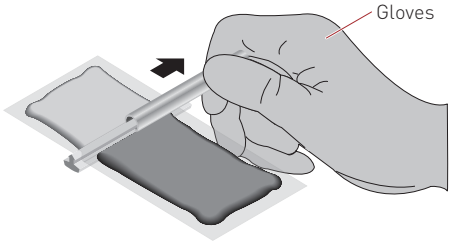

Figure 74: Remove plastic clamp

2. Hold on to both ends of the plastic package and slide back and forth against an edge for a minimum of 40 times. Ensure resin and hardener are thoroughly mixed before using.

Important: Product must be used within 10 minutes of mixing.

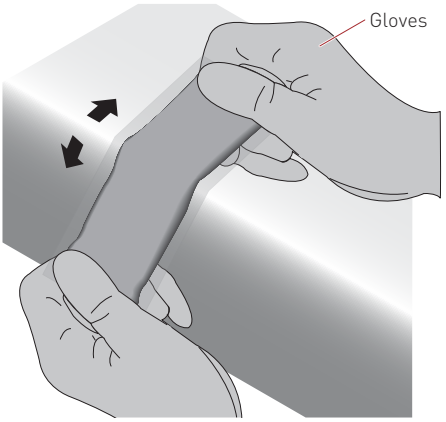

Figure 75: Mix resin and hardener

3. Cut one corner of the plastic package to make an opening of about 1/8 in (3 mm).

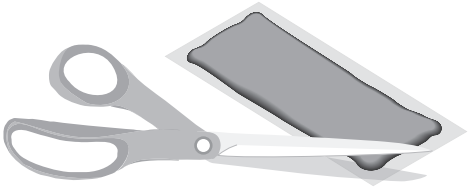

Figure 76: Cut one corner of plastic package

4. Squeeze the package to dispense the epoxy compound through the opening.

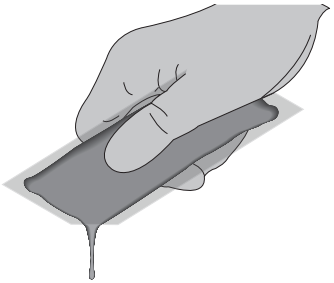

Figure 77: Dispense epoxy

4 Appendixes

Appendix C: Insulation Resistance (IR) Test

Test Equipment

500 Vdc Megohmmeter

IR Testing

IR testing is conducted using a megohmmeter and tests the integrity of the cable between the conductor(s) and the cable sheath, and between conductor pairs in multi-conductor cables.

Test Criteria

The minimum IR for a clean, dry, properly installed cable should reflect the values shown below, regardless of the cable length.

- In a warm, dry environment, IR readings should be 200 MΩ or higher.
- In an outdoor environment or indoors in wet or humid conditions, IR readings should all be above 100 MΩ.
- Prior to initial start-up (commissioning) – minimum 25 MΩ.
- After any maintenance or repair work – minimum 25 MΩ.
- Any large difference in readings between similar cables under similar conditions should be investigated.

Important: If IR readings are low, follow the instructions in Appendix D to dry out the cable.

Test Procedure

1. Set megohmmeter test voltage at 0 Vdc or off.
2. Connect the positive (+) (earth) lead to the cable sheath (Figure 78).
3. Connect the negative (-) (line) lead to one conductor.
4. Turn on the megohmmeter and set the voltage to 500 Vdc; apply the voltage for one minute. Meter needle should stop moving. Rapid deflection indicates a short. Note the insulation resis-

tance value. It should correspond to the values shown under Test Criteria.

5. Turn off the megohmmeter.
6. If testing a single conductor cable, proceed to step 7. If testing a multi-conductor cable, proceed to step 8.
7. Testing is complete. If the megohmmeter does not self-discharge, discharge phase connection to ground with a suitable grounding rod. Disconnect the megohmmeter.
8. If testing a multi-conductor cable, repeat steps 3 through 5 for remaining conductors.
9. Next, remove the positive (+) (earth) lead from the cable sheath and connect it to one of the other conductors (Figure 78).
10. Test the cable as in steps 3 through 5.
11. Repeat for all conductor pair combinations.
12. Testing is complete. If the megohmmeter does not self-discharge, discharge phase connection to ground with a suitable grounding rod. Disconnect the megohmmeter.

⚠ **WARNING: Fire hazard in hazardous locations. Megohmmeter tests can produce sparks. Be sure there are no flammable vapors in the area before performing this test.**

4 Appendixes

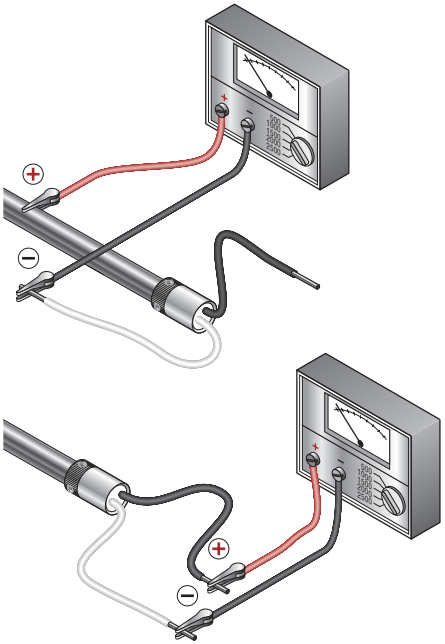

Figure 78: Testing IR between cable sheath and conductors and between conductor pairs

4 Appendixes

Appendix D: Improving Insulation Resistance

Important: Wear a full face shield when drying out the MI cable.

To maintain the high performance of MI cable, the cable must be properly stored and the ends must remain sealed.

Damaged terminations or heat shrinkable end caps that are damaged, missing, or removed will cause the magnesium oxide insulation (white powder) to absorb moisture, lowering the IR. The cable must be "heated out" to remove the moisture and bring the IR back to anacceptable level. Drying out the MI cable to remove any moisture will normally be unnecessary providing the termination seal is completed within a few minutes of removing the sheath.

If moisture is found in the cable when checking IR, it may be removed using one of the following methods:

1. If excess cable is available, 6 to 12 in (150 to 300 mm) of cable may be removed from the end before sealing the cable.
2. Apply heat to the cable following the procedure below.

Important: Moisture will not normally penetrate more than 12 in (300 mm) into the cable.

If moisture is detected in the cable, use an oxy-acetylene or mapp gas torch with a large flame and "heat out" the cable beginning 12 in (300 mm) back from the end. Gradually stroke toward and past the cable end. Pyrotenax Alloy 825 sheath cables should be heated to a dull red color. Take care not to overheat any one area of the cable sheath as this could damage the cable.

Use a short sweeping motion of the torch and heat about 2 in (50 mm) of cable at a time, repeating 4 to 5 times. Stroke the flame towards the cable end as shown in Figure 79. Do not stroke the flame in the opposite direction as this will drive the moisture into the cable. Gradually move the flame toward the end

while maintaining the short sweeping motion of the torch, Figure 80. If you heat toward the cable end too quickly you may skip over the moisture and drive it further back into the cable.

It may be necessary to repeat the above procedure several times to completely remove all moisture from the cable.

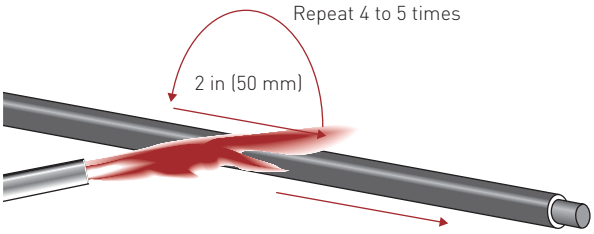

Figure 79: Heat 2 in (50 mm) at a time

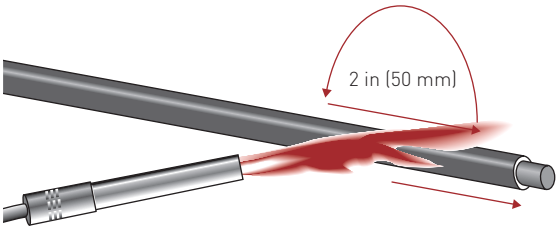

Figure 80: Stroke flame towards the end

When first heated, the IR of the cable will decrease; however, after the flame has been removed and the cable cools, the IR will increase to an acceptable level if the moisture has been driven out. On completion, check IR with a 500 Vdc megohmmeter following the instructions in Appendix C. If working with shielded twisted pair cable, also test IR between the sheath and inner shield. Reseal cable end with adhesive lined heat shrink tubing until ready to terminate cable.

4 Appendixes

Appendix E: Optional Procedure to Braze Pot to Cable Sheath

For improved mechanical strength, the pot may be brazed to the cable sheath. Ensure that the required permits to use an open flame have been obtained from the Authorized Safety Representative prior to proceeding.

Additional tools and materials required:

- Oxy-acetylene torch with Victor No. 0 welding tip (or equivalent)
- Handy & Harmon 1/16 in (1.6 mm) or 1/32 in (0.8 mm) diameter "Braze 560" silver solder (or equivalent)
- Prostar silver brazing flux (or equivalent)

Use emery paper to polish surface of cable sheath all around the area to be brazed.

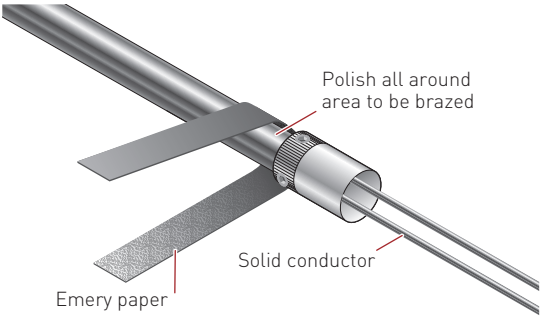

Figure 81: Polish surface of cable sheath

Apply flux to the cable sheath and back of pot where it meets the cable sheath. This prevents oxidation of themetals during the next step.

Next, remove moisture from cable by heating the last 6 in (150 mm) of cable with the oxy-acetylene torch. Begin 6 in (150 mm) back from end and stroke flame towards end (see Appendix D for detailed procedure).

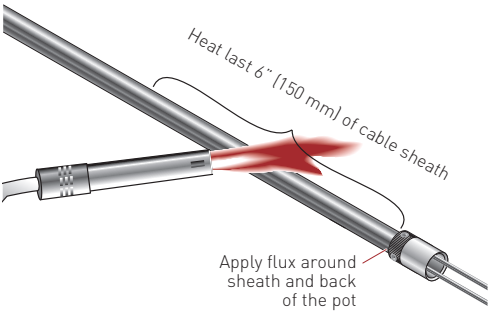

Figure 82: Heat cable to remove moisture

Braze pot to cable sheath while the cable is still hot. Ensure silver solder flows all around the pot and sheath by moving the flame around the cable.

Important: To make a good quality solder joint, the silver solder rod must be coated with flux at all times. Dip in flux as many times as necessary until brazing operation is complete.

CAUTION: Cable will be hot. Allow cable to cool until just warm to the touch, before completing remaining termination steps.

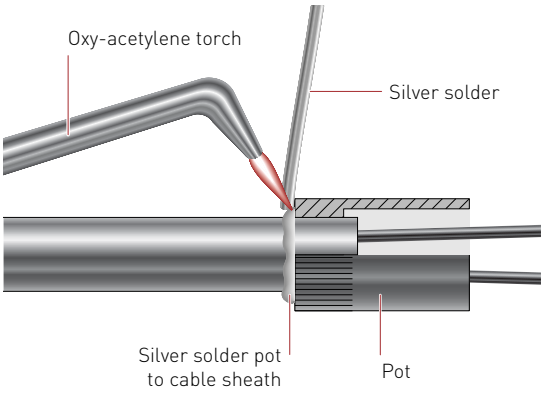

Figure 83: Braze pot to cable sheath

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